

## Refine Search

### Search Results -

Term	Documents
BREY	911
BREYS	1
(BREY AND L15).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	14
(L15 AND BREY).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	14

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L15 and Brey

Refine Search

Recall Text

Clear

Interrupt

### Search History

DATE: Monday, August 01, 2005   [Printable Copy](#)   [Create Case](#)

#### Set Name Query

side by side

#### Hit Count Set Name

result set

DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ

<u>L22</u>	L15 and Brey	14	<u>L22</u>
<u>L21</u>	L16 and Brey	0	<u>L21</u>
<u>L20</u>	L17 and Brey	0	<u>L20</u>
<u>L19</u>	L18 and Brey	0	<u>L19</u>
<u>L18</u>	L17 and (capacitor or inductor)	24	<u>L18</u>
<u>L17</u>	L16 and dielectric	63	<u>L17</u>
<u>L16</u>	L15 and L14 and L13 and L12	111	<u>L16</u>
<u>L15</u>	L11 and (thin adj film)	791	<u>L15</u>
<u>L14</u>	L11 and bismuth	209	<u>L14</u>
<u>L13</u>	L11 and yttrium	429	<u>L13</u>
<u>L12</u>	L11 and thallium	207	<u>L12</u>

<u>L11</u>	L10 and (resonator or antenna or coil or transmitter or receiver)	1139	<u>L11</u>
<u>L10</u>	L9 and substrate	3519	<u>L10</u>
<u>L9</u>	(high adj temperature adj superconduct\$4)	8025	<u>L9</u>
<u>L8</u>	(high adj temperature adj superconductor)	5073	<u>L8</u>
<u>L7</u>	L6 and ma	12	<u>L7</u>
<u>L6</u>	withers and (high adj temperature adj superconductor)	42	<u>L6</u>
<i>DB=EPAB; PLUR=YES; OP=ADJ</i>			
<u>L5</u>	EP-1096266-B1.did.	0	<u>L5</u>
<u>L4</u>	DE-69633417-E.did.	0	<u>L4</u>
<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>			
<u>L3</u>	L2 and (high adj temperature adj superconductor)	16	<u>L3</u>
<u>L2</u>	brey	912	<u>L2</u>
<u>L1</u>	6538445	4	<u>L1</u>

END OF SEARCH HISTORY

## Refine Search

### Search Results -

Term	Documents
(24 AND 16).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	4
(L24 AND L16 ).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	4

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L25

Refine Search

Recall Text

Clear

Interrupt

### Search History

DATE: Monday, August 01, 2005   [Printable Copy](#)   [Create Case](#)

#### Set Name Query

side by side

#### Hit Count Set Name

result set

*DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ*

<u>L25</u>	L24 and L16	4	<u>L25</u>
<u>L24</u>	L23 and dielectric	24	<u>L24</u>
<u>L23</u>	L15 and withers	34	<u>L23</u>
<u>L22</u>	L15 and Brey	14	<u>L22</u>
<u>L21</u>	L16 and Brey	0	<u>L21</u>
<u>L20</u>	L17 and Brey	0	<u>L20</u>
<u>L19</u>	L18 and Brey	0	<u>L19</u>
<u>L18</u>	L17 and (capacitor or inductor)	24	<u>L18</u>
<u>L17</u>	L16 and dielectric	63	<u>L17</u>
<u>L16</u>	L15 and L14 and L13 and L12	111	<u>L16</u>
<u>L15</u>	L11 and (thin adj film)	791	<u>L15</u>
<u>L14</u>	L11 and bismuth	209	<u>L14</u>
<u>L13</u>	L11 and yttrium	429	<u>L13</u>

<u>L12</u>	L11 and thallium	207	<u>L12</u>
<u>L11</u>	L10 and (resonator or antenna or coil or transmitter or receiver)	1139	<u>L11</u>
<u>L10</u>	L9 and substrate	3519	<u>L10</u>
<u>L9</u>	(high adj temperature adj superconduct\$4)	8025	<u>L9</u>
<u>L8</u>	(high adj temperature adj superconductor)	5073	<u>L8</u>
<u>L7</u>	L6 and ma	12	<u>L7</u>
<u>L6</u>	withers and (high adj temperature adj superconductor)	42	<u>L6</u>
<i>DB=EPAB; PLUR=YES; OP=ADJ</i>			
<u>L5</u>	EP-1096266-B1.did.	0	<u>L5</u>
<u>L4</u>	DE-69633417-E.did.	0	<u>L4</u>
<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>			
<u>L3</u>	L2 and (high adj temperature adj superconductor)	16	<u>L3</u>
<u>L2</u>	brey	912	<u>L2</u>
<u>L1</u>	6538445	4	<u>L1</u>

END OF SEARCH HISTORY

## Hit List

Clear

Generate Collection

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Fwd Refs

Bkwd Refs

Generate OACS

### Search Results - Record(s) 1 through 4 of 4 returned.

☐ 1. Document ID: US 6727702 B2, WO 9405022 A1, US 6335622 B1, US 20020135373 A1, US 6538445 B2, US 20040021466 A1    Relevance Rank: 99

L1: Entry 4 of 4

File: DWPI

Apr 27, 2004

DERWENT-ACC-NO: 1994-083441

DERWENT-WEEK: 200429

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TITLE: Superconducting capacitor e.g. for RF antenna, magnetic resonance imager - has inter-digital structure having interspersed tines which may be cut or receive dielectric to set capacitance

INVENTOR: BOURNE, L C; JAMES, T W ; HAMMOND, R B ; SCALAPINO, D J ; SUN, J Z ; JAMES, T

PATENT-ASSIGNEE: SUPERCONDUCTOR TECHNOLOGIES IN (SUPEN)

PRIORITY-DATA: 1992US-0934921 (August 25, 1992), 2001US-0970842 (October 3, 2001), 2003US-0393089 (March 19, 2003)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 6727702 B2	April 27, 2004		000	G01V003/00
WO 9405022 A1	March 3, 1994	E	028	H01G001/01
US 6335622 B1	January 1, 2002		000	G01V003/00
US 20020135373 A1	September 26, 2002		000	G01V003/00
US 6538445 B2	March 25, 2003		000	G01V003/00
US 20040021466 A1	February 5, 2004		000	G01V003/00

DESIGNATED-STATES: JP AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE

CITED-DOCUMENTS:US 3764938; US 4409608 ; US 4872086 ; US 5061686 ; US 5075281 ; US 5219827

## APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
US 6727702B2	August 25, 1992	1992US-0934921	Cont of
US 6727702B2	October 3, 2001	2001US-0970842	Cont of
US 6727702B2	March 19, 2003	2003US-0393089	
US 6727702B2		US 6335622	Cont of
US 6727702B2		US <u>6538445</u>	Cont of

WO 9405022A1	August 16, 1993	1993WO-US07701	
US 6335622B1	August 25, 1992	1992US-0934921	
US20020135373A1	August 25, 1992	1992US-0934921	Cont of
US20020135373A1	October 3, 2001	2001US-0970842	
US20020135373A1		US 6335622	Cont of
US 6538445B2	August 25, 1992	1992US-0934921	Cont of
US 6538445B2	October 3, 2001	2001US-0970842	
US 6538445B2		US 6335622	Cont of
US20040021466A1	August 25, 1992	1992US-0934921	Cont of
US20040021466A1	October 3, 2001	2001US-0970842	Cont of
US20040021466A1	March 19, 2003	2003US-0393089	
US20040021466A1		US 6335622	Cont of
US20040021466A1		US <u>6538445</u>	Cont of

INT-CL (IPC): G01 V 3/00; H01 B 12/00; H01 G 1/01; H01 G 1/14; H01 G 4/06

ABSTRACTED-PUB-NO: US 6335622B  
BASIC-ABSTRACT:

The superconducting capacitor has two superconducting plate members fabricated on a substrate and separated by a dielectric. The first superconducting plate member comprises a number of tines extending along the surface of the substrate. The second plate has a number of tines extending along the surface and interspersed between the tines of the first plate with the substrate

USE/ADVANTAGE - Low loss tuning of resonant circuits, improved electronic signal reception.

ABSTRACTED-PUB-NO: US20020135373A  
EQUIVALENT-ABSTRACTS:

The superconducting capacitor has two superconducting plate members fabricated on a substrate and separated by a dielectric. The first superconducting plate member comprises a number of tines extending along the surface of the substrate. The second plate has a number of tines extending along the surface and interspersed between the tines of the first plate with the substrate

USE/ADVANTAGE - Low loss tuning of resonant circuits, improved electronic signal reception.

The superconducting capacitor has two superconducting plate members fabricated on a substrate and separated by a dielectric. The first superconducting plate member comprises a number of tines extending along the surface of the substrate. The second plate has a number of tines extending along the surface and interspersed between the tines of the first plate with the substrate

USE/ADVANTAGE - Low loss tuning of resonant circuits, improved electronic signal reception.

WO 9405022A

CHOSEN-DRAWING: Dwg.1,2/8

DERWENT-CLASS: S01 S03 V01 W02

EPI-CODES: S01-E02A; S01-H05; S03-E07A; V01-B03A; V01-B03D1E; V01-B03X; W02-B08E;  
W02-B09;

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	KWT	Draw D
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☐ 2. Document ID: US 6727702 B2 Relevance Rank: 99

L1: Entry 2 of 4

File: USPT

Apr 27, 2004

US-PAT-NO: 6727702

DOCUMENT-IDENTIFIER: US 6727702 B2

TITLE: Tunable superconducting resonator and methods of tuning thereof

DATE-ISSUED: April 27, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hammond; Robert B	Santa Barbara	CA		
Sun; Jonathan Z.	Shrub Oak	NY		
Scalapino; Douglas J.	Santa Barbara	CA		
James; Timothy W.	Goleta	CA		
Bourne; Lincoln C.	Santa Barbara	CA		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
Superconductor Technologies, Inc.	Santa Barbara	CA				02

APPL-NO: 10/ 393089 [PALM]

DATE FILED: March 19, 2003

## PARENT-CASE:

This Application is a continuation of U.S. application Ser. No. 09/970,842 filed on Oct. 3, 2001, now U.S. Pat. No. 6,538,445, which itself is a continuation of U.S. application Ser. No. 07/934,921, filed on Aug. 25, 1992, now issued as U.S. Pat. No. 6,335,622. The above-identified Applications and issued patents are incorporated by reference as if set forth fully herein.

INT-CL: [07] G01 V 3/00

US-CL-ISSUED: 324/318; 324/322

US-CL-CURRENT: 324/318; 324/322

FIELD-OF-SEARCH: 324/322, 324/318, 324/306, 324/307, 333/185, 342/1, 505/1, 505/701, 505/705

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>3857114</u>	December 1974	Minet et al.	333/73
<u>4981838</u>	January 1991	Whitehead	505/1
<u>5231078</u>	July 1993	Riebman et al.	505/1
<u>5276398</u>	January 1994	Withers et al.	324/318
<u>5307068</u>	April 1994	Hartemann	342/1
<u>5328893</u>	July 1994	Sun et al.	505/210
<u>5391543</u>	February 1995	Higaki et al.	505/210
<u>6169399</u>	January 2001	Zhang et al.	324/318
<u>6335622</u>	January 2002	James et al.	324/318
<u>6347237</u>	February 2002	Eden et al.	505/210
<u>6538445</u>	March 2003	James et al.	324/322

ART-UNIT: 2859

PRIMARY-EXAMINER: Arana; Louis M.

ATTY-AGENT-FIRM: O'Melveny &amp; Myers LLP

## ABSTRACT:

A method of tuning a high temperature superconductor (HTS) resonator includes the steps of providing a HTS inductor and a HTS capacitor, the HTS capacitor being electrically connected to the HTS inductor. A tuning body is provided adjacent to the HTS inductor and the HTS capacitor. The relative position of the tuning body with respect to the HTS inductor and the HTS capacitor is altered so as to tune the resonator. A tunable resonant circuit is provided that includes a substrate having a planar surface. At least one resonator formed from HTS material is disposed on the substrate, the resonator having one or more turns that when combined, turn through greater than 360.degree..

29 Claims, 17 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	IMC	Draw D.
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☐ 3. Document ID: US 6538445 B2 Relevance Rank: 93

L1: Entry 3 of 4

File: USPT

Mar 25, 2003

US-PAT-NO: 6538445DOCUMENT-IDENTIFIER: US 6538445 B2

TITLE: Superconducting control elements for RF antennas

DATE-ISSUED: March 25, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
James; Timothy W.	Goleta	CA		
Bourne; Lincoln C.	Santa Barbara	CA		



## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE	CODE
Superconductor Technologies, Inc.	Santa Barbara	CA				02

APPL-NO: 09/ 970842 [PALM]

DATE FILED: October 3, 2001

## PARENT-CASE:

RELATED APPLICATION INFORMATION This application is a continuation of application Ser. No. 07/934,921, filed Aug. 25, 1992, entitled "Superconducting Control Elements for RF Antennas", now U.S. Pat. No. 6,335,622.

INT-CL: [07] G01 Y 3/00

US-CL-ISSUED: 324/322; 324/318

US-CL-CURRENT: 324/322; 324/318

FIELD-OF-SEARCH: 324/300, 324/318, 324/322, 324/306, 324/307, 333/185, 342/1, 342/4, 505/1, 505/701, 505/705

## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>3857114</u>	December 1974	Minet et al.	333/73
<u>4981838</u>	January 1991	Whitehead	
<u>5276398</u>	August 1992	Withers	
<u>5231078</u>	July 1993	Riebman et al.	
<u>5307068</u>	April 1994	Hartemann	333/99S
<u>5391543</u>	February 1995	Higaki et al.	505/210
<u>6347237</u>	February 2002	Eden et al.	333/185

ART-UNIT: 2862

PRIMARY-EXAMINER: Arana; Louis

ATTY-AGENT-FIRM: O'Melveny &amp; Myers LLP

## ABSTRACT:

Control elements for RF antennas including high temperature superconducting capacitors, alone or in combination with other elements, including high temperature superconducting films, structures, and applications are formed. In one embodiment a high temperature superconducting capacitor is coupled to an inductor to form a resonant circuit. In another embodiment a high temperature superconducting capacitor is used to make a low-resistance cross-over for an inductor coil. Additional circuits include circuits which do not use non-superconducting materials in the circuit, circuits which have coupled superconducting inductors to provide low-loss signal coupling, tuning and bandwidth broadening, and circuits which include switches to shut off the superconductivity of a superconducting element including low-loss photoconducting and superconducting thermal switches. These circuits may be used to improve Magnetic Resonance Imaging (MRI).

30 Claims, 16 Drawing figures

Full	Title	Citation	Front	Review	Classification	Date	Reference	Claims	DOC	Draw
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☐ 4. Document ID: US 20040021466 A1 Relevance Rank: 93

L1: Entry 1 of 4

File: PGPB

Feb 5, 2004

PGPUB-DOCUMENT-NUMBER: 20040021466

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20040021466 A1

TITLE: TUNABLE SUPERCONDUCTING RESONATOR AND METHODS OF TUNING THEREOF

PUBLICATION-DATE: February 5, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hammond, Robert B.	Santa Barbara	CA	US	
Sun, Jonathan Z.	Shrub Oak	NY	US	
Scalapino, Douglas J.	Santa Barbara	CA	US	
James, Timothy W.	Goleta	CA	US	
Bourne, Lincoln C.	Santa Barbara	CA	US	

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE	CODE
Superconductor Technologies, Inc.	Santa Barbara	CA	US	02	

APPL-NO: 10/ 393089 [PALM]

DATE FILED: March 19, 2003

## RELATED-US-APPL-DATA:

Application 10/393089 is a continuation-of US application 09/970842, filed October 3, 2001, US Patent No. 6538445

Application 09/970842 is a continuation-of US application 07/934921, filed August 25, 1992, US Patent No. 6335622

INT-CL: [07] G01 V 3/00

US-CL-PUBLISHED: 324/318; 324/315, 324/322, 324/309

US-CL-CURRENT: 324/318; 324/309, 324/315, 324/322

REPRESENTATIVE-FIGURES: 3, 4,

## ABSTRACT:

A method of tuning a high temperature superconductor (HTS) resonator includes the steps of providing a HTS inductor and a HTS capacitor, the HTS capacitor being electrically connected to the HTS inductor. A tuning body is provided adjacent to the HTS inductor and the HTS capacitor. The relative position of the tuning body

with respect to the HTS inductor and the HTS capacitor is altered so as to tune the resonator. A tunable resonant circuit is provided that includes a substrate having a planar surface. At least one resonator formed from HTS material is disposed on the substrate, the resonator having one or more turns that when combined, turn through greater than 360.degree..

## RELATED APPLICATIONS

[0001] This Application is a continuation of U.S. application Ser. No. 09/970,842 filed on Oct. 3, 2001, now allowed, which itself is a continuation of U.S. application Ser. No. 07/934,921, filed on Aug. 25, 1992, now issued as U.S. Pat. No. 6,335,622. The above-identified Applications and issued patents are incorporated by reference as if set forth fully herein.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	NOAC	Draw D.
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Clear	Generate Collection	Print	Fwd Refs	Bkwd Refs	Generate OACS
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Term	Documents
"6538445"	4
6538445S	0
"6538445".PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	4
(6538445).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	4

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